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ABSTRACT

Interviews were conducted with 30 teacher educators and the chairperson or dean in 6 undergraduate teacher education programs to investigate their use of research in teacher preparation. Among the findings was evidence that faculty typically learn about research through journals and conferences and discuss research most often in context with other issues, such as program revision and accreditation. Faculty members would be encouraged most to get involved with research by released time and seed grants and are inhibited by lack of free time, other work priorities, and committee responsibilities. Research is typically regarded as one process for gaining knowledge and exposing students to a wide variety of ideas, and research findings are selected for discussion on the basis of fitting into the existing conceptual structure of the course, the instructor's own standards, and easy availability. Most frequently cited instructional objectives for using research were to develop critical thinking and supplement the existing knowledge base. Faculty most frequently emphasized theories underlying research findings or answers and kinds of studies rather than individual investigations. (JD)

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FACULTY REPORTED USE OF RESEARCH IN TEACHER PREPARATION COURSES: SIX INSTRUCTIONAL SCENARIOS

by

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The Use of Research in the Teacher Preparation Curriculum

Robby Hutchison Champion

ABSTRACT

The study investigated faculty reported use of research in the teacher preparation curriculum. Four major questions were addressed: 1) How do faculty prefer to learn about research? 2) How is research used in the teacher preparation courses? 3) What are the characteristics of research cited as useful? and, 4) What work setting factors encourage use of research?

Open-ended, standard interviews were conducted with thirty faculty and the chairperson or dean in six randomly selected undergraduate teacher education programs in Maryland. Institutions were stratified by mission and program size. Frequencies of responses were tabulated and categories were derived from the data. Teaching materials shown were also categorized.

The faculty interviewed typically learn about research through journals and conferences and less frequently through colleagues. Research involvement was not expected behavior in five of the six programs surveyed. When faculty discuss research it is most often in context with other issues, such as program revision and accreditation. Organized departmental research seminars were not prevalent.

Faculty report that they would be encouraged most to get involved with research by released time and seed grants. Cited as inhibiting factors most frequently were lack of blocks of free time, other work priorities, and committee responsibilities.

Faculty typically regard research as one process for gaining knowledge. They emphasize their role in exposing education students to a wide variety of ideas. Concern for deriving rules-for-teaching or directly transferring research findings to classroom practices was not found in the data. Faculty typically select research that 1) fits the existing conceptual structure of their courses, 2) meets their own standards, and 3) is available in an easily used form.

Most frequently cited instructional objectives for using research were 1) to develop critical thinking and 2) to supplement the existing knowledge base. Faculty report using six instructional strategies to teach research findings or processes. Lecture, discussion, assigned reading in texts and periodicals, and "research-type" learning experiences were most frequent. Less frequently reported were role modeling and class demonstrations.

Faculty most frequently emphasize 1) theories underlying research, 2) findings or answers, and 3) kinds of studies rather than individual investigations. The work of Piaget, interactional analysis work by Flanders and others, the work of Skinner, and Bloom were cited most often as important research contributions.

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FACULTY REPORTED USE OF RESEARCH IN TEACHER PREPARATION COURSES: SIX INSTRUCTIONAL SCENARIOS

STATEMENT OF THE PROBLEM

This study is a descriptive, qualitative survey of faculty reported use of research in courses in the required professional education sequence. The objective of this study is to describe patterns of faculty use of research in the teacher preparation curriculum. The study addressed four questions: 1) How do education faculty prefer to obtain new information about research? 2) What are the ways in which education faculty use educational research in their education courses? 3) What are the characteristics of the research most commonly cited by education faculty as being useful in their undergraduate courses? and 4) What are the institutional contexts or work setting factors most favorable to the use of educational research (Champion, 1982)?

SIGNIFICANCE OF THE PROBLEM

Practical experience, ideology, theory, and hunches have been the primary sources of knowledge used in the education of teachers (Spaulding, 1977; Smith, 1980). Only within the past seventy-five years have educators begun to seek knowledge through scientific investigation. In her analysis of the evolution of research in education, Geraldine Clifford chronicled the tortured history of research as a means of gaining knowledge and legitimizing the profession. Charges have been made that educational research has focused on insignificant problems and often been dominated by insignificant studies that defy replication, and by inadequate or inappropriate study designs. Clifford found a general mistrust of the scientific view of schooling among the education community (1973).

From its beginning, "educational research" has become synonymous with the words "change" and "innovation." The expectation has been that educational research could improve school practices. However, as Clifford observed, many of the prominent innovations in the field of education in the past century started first in the schools with little or no research basis (1973). Paradoxically, as McDonald (1977) pointed out, well documented research efforts have often not made an impact on school practices or the way teachers are trained.

B. O. Smith (1980) has argued that education research has not been examined, organized, and sufficiently synthesized into a meaningful body of professional knowledge. He places responsibility for linking research and practice on teacher educators:

> The failure of research to make an impact upon practice as it might have done is not to be attributed to lack of research knowledge as the fact that pedagogical faculties largely ignore findings as they train school personnel, especially teachers and administrators. When they have made use of research, they have done so in the fashion of liberal arts courses which are largely verbal, inducing no operational understanding and no ability to perform in accordance with research knowledge (p. 54).

Teacher educators emerge from the literature as a curious blend of conflicting socializations as academicians and school practitioners. As Lortie posited in his study of school teachers, "Occupations shape people" (1975, p. 11). Teacher educators' previous work experiences in schools often influences them to orient education courses toward using practical knowledge or professional wisdom. Yarger, Howie, and Joyce concur (1977) that education faculty are practitioners and that a publish-or-perish research atmosphere does not generally exist in teacher education.

Clark and Guba conclude from their study that the reward system built into higher education must create a role dissonance for education faculty who have generally been weakly socialized to "knowledge production and utilization activity" (1977). They reported that research activity was not an integral part of the

teacher education programs surveyed with the exception of a few large, doctoral-level institutions.

Some teacher education programs have clearly aligned their curriculum with particular ideologies, theories, and beliefs. Programs with heavy developmental emphasis are typical of this trend. Another example is the recent project at Stanford University that has attempted to use four major effectiveness studies as its primary source of empirical knowledge (Crawford and Gage, 1978). Most often, however, teacher preparation programs probably expose students of teaching to a smorgasbord of ideas, beliefs, and theories with the emphasis varying depending on the individual instructor.

The literature is replete with ideas and viewpoints on the place research should have in the professional preparation of teachers. The teacher educator in the linker role must consider many questions when designing the content and processes of professional education courses: Should the findings from research be distilled into "teachers should" statements, as Gage (1978b) did when he sifted through the teacher effectiveness research? Or is it inappropriate to teach sets of rules based on research findings, as Fenstermacher (1980) and others have warned (Lieberman, 1980; Feiman-Nemser, 1980)? Is it now most important to synthesize all the research that has been done (Dunkin and Biddle, 1974; Medley, 1977; and Borich, 1979)? Is Berliner's focused data collection/consultation/data collection cycle a promising strategy for linking theory and practice (1982)? Should one instead consider Broudy's view that much school knowledge does not have direct application but is valuable for interpreting new information (1980)? Or is it sufficient, as Tyler has suggested, that the impact of research be increased understanding of what we know (in Guba and Elam, 1964)?

DELIMITATIONS, ASSUMPTIONS, AND DEFINITIONS

Delimitations

1. The study is limited by the sources of data used to resolve the research questions. Data were collected through interviews with faculty members in education departments and chairpersons of education. Faculty interviews were, when possible, supplemented and aided by the use of course documents shown by participants.
2. The study is limited in the scope of teacher education courses referred to in the interview questions. Not all courses in teacher education were included. Only the courses that are required of all teacher education majors in the professional education sequence were considered.
3. The study is confined to a representative sample of the undergraduate teacher education faculty in six randomly (3 public and 3 private) selected teacher education institutions in Maryland. Most of the faculty in the study work in public institutions of higher education.
4. Because most of the teacher education programs in Maryland are small (seventeen of the twenty programs report fewer than one hundred majors graduating in 1980) the study obtained data predominantly from faculty in relatively small programs. The findings are, therefore, representative of smaller, non-doctoral level institutions of higher education.

Definitions Used in This Study

Education research - disciplined inquiry or scientific investigation directed at gaining a better understanding of or improving the dynamics of phenomenon involved in education.

Institutional context - factors that constitute the culture of the department or institution, such as the size of the department, faculty workload, formal and informal communication structures within the department, mission of the institution, and financial support of travel and research.

Professional education sequence - sequence of courses and experiences required for all teacher education majors in a state-approved teacher education program. The sequence generally includes foundations of education (social, psychological, philosophical, and historical), learning and instruction, structure and organization of schools, and general methods or curriculum.

Profound learning experiences - experiences described by the interviewees as being very important in learning about research; those experiences that interviewees described as having an impact on their thinking or behavior.

Typical scenario - a composite of information constructed from the data to illustrate predominant or most frequent responses in the data.

Undergraduate teacher education faculty - full-time faculty who regularly teach most of their workload in the undergraduate education courses in the professional education sequence in state-approved teacher education programs in Maryland.

RATIONALE FOR THE STUDY

Educational literature is abundant with ideas and challenges for changing teacher education. In recent years much has been written about the need to consider the use of educational research. The literature indicates that the question of how educational research is used may be subtle and complex. It may be influenced by the context in which education faculty work.

Few investigations have been reported on how research processes or products are being used in the preparation of teachers. Further investigation is needed now into how education faculty learn about new research, how they select and use research, and what factors in their work setting encourage the use of research. It is expected that the present study will contribute to the knowledge in the fields of teacher education and research utlization.

DESIGN OF THE STUDY

The sources of data used in the present study have been intensive, structured interviews with education faculty in a variety of

work settings, examination of course documents used by interviewees to teach research, and interviews with the chairperson/dean at each institution in the study. Categories for examining and analyzing the data have been derived from the data collected.

Instruments

The instruments used to collect data for the study were: 1) a faculty interview guide consisting of 33 items, 2) a chairperson interview guide consisting of 5 items, and 3) a guide for broadly categorizing course documents shown by interviewees. The study instruments are displayed in the appendices of the original dissertation (Champion, 1982).

Population for the Study

The population for this study is the full-time faculty in the twenty state approved undergraduate teacher education programs in Maryland. The population is further defined as those faculty who teach all or most of their workload in the undergraduate, professional education sequence of required courses.

Sampling Procedures

In order to investigate the question on work setting factors influencing use of research, the sampling procedure involved two stages.

Stage 1. The teacher preparation institutions in Maryland were stratified according to size and mission. The rationale for the stratification was based on the conclusions of Clark and Guba (1977) who reported that faculty research involvement was greatly influenced by institution size and mission. Thus, the sample selection procedure used insured that the study included faculty from a variety of institution contexts or work settings.

A sample of 6 programs was randomly selected from a population of institutions having both elementary and secondary teacher education approved programs. The resulting sample distribution is as follows: 2 "small size" institutions (1 private and 1 public); 3 "medium sized" institutions (2 private and 1 public); and 1 "large size" institution (public). For the purposes of this study, institutions with fewer than 50 teacher education

graduates were designated as small; those with 51 to 200 graduates were described as medium; and those with over 200 graduates were considered large institutions.

Stage 2. After access had been gained in the six institutions, the second stage was completed. The schedule of classes for fall, 1981, was used with the assistance of the chairperson or dean, to identify and select all faculty who fit the definition used. Upon contacting the 41 faculty identified, it was determined that 36 fit the study definition. Thirty of those agreed to participate. Twenty-one of the participating faculty work in three public institutions; nine work in three private institutions.

Validity and Reliability

The study was piloted at one public institution in June, 1981. The pilot study enabled the investigator to 1) determine the feasibility of resolving the research questions through interviews, 2) evaluate the validity and reliability of the interview instruments, 3) practice the interview technique, and 4) determine the value of using course documents as a source of data.

Following the analysis of the data in the pilot interviews, changes were made in the organization and content of the instruments. It was decided that course materials shown by interviewees should be used and broadly categorized.

Interviewees were more responsive when the investigator took handwritten notes than when an electronic recorder was used. It was decided that written notes would be taken and then checked with the interviewee for accuracy at the conclusion of each interview session.

METHOD OF ANALYSIS

During the interviews the investigator took handwritten notes to record the responses for each question. All courses documents shown by faculty were also noted. At the conclusion of each interview session the written notes were reviewed orally with each interviewee to check for accuracy. Interviews ranged from 60 to

130 minutes; the mode was 80 minutes.

After the thirty faculty and six chairpersons or deans had been interviewed, the investigator organized the data for each research question. Responses for each research question were reviewed by the investigator. Separate elements, ideas, or events within each passage were noted.

After examining the data for widespread and typical elements, the response patterns were separated into categories. For example, one set of categories derived for Research Question 2 is shown in Table 1 on page 10. Frequency counts were completed on each response element using the categories developed. To insure accuracy in assigning categories to each response element, the investigator checked the consistency of that response pattern with other responses in the same interview.

Predominant patterns were determined by calculating the percentage of the total responses in each category. In open-ended questions where some interviewees gave more than one response it was also necessary to calculate the percentage of faculty responses in each category. Formulas used are shown in Tables 1,2, and 3 on pages 10, 12, and 17 respectively.

RESULTS

Research Question 1: How do Education Faculty Prefer to Learn About New Research?

Of the seventeen information sources the thirty faculty reported using to obtain research information slightly more than 50 percent of the sources involve primarily person-to-person interaction. Slightly less than 50 percent of the information sources are printed information. Journals and conferences are the most typical ways faculty learn about new research.

Faculty favor journals and other publications because of the convenience of fitting reading into their fragmented work schedules. Conferences are favored consistently because of the active interaction of the conference experience. Faculty also pointed out

that conferences provide "wide exposure to ideas and information quickly." Participants typically screen for research information on topics they have followed for years and for information that relates to their courses.

Faculty who were perceived as more "research oriented" worked in a variety of settings and include 20 percent of the thirty interviewees. Common elements found among them in regard to research are: active communication with a network of colleagues across the country, an interest in research, a broad definition of research, and emphasis on research as a process in their courses rather than research as a cource of answers.

Organized departmental seminars for the purpose of discussing or disseminating research information was not a prevalent pattern in the six institutions surveyed. Ten percent of the faculty reported that such seminars provide a regular source of research information for them. Those faculty worked in the smallest institution in the sample.

Fifty-seven percent of the faculty responded "yes" when asked if they have conversations about research; 23 percent responded "no"; 20 percent responded "rarely." Most of the interviewees who answered "yes" added qualifying remarks such as, "yes, ... but we're generally discussing something else and someone mentions some research on it." When research is discussed it is typically prompted by 1) a "hot issue" receiving publicity or 2) when planning for curriculum change or 3) in preparation for accreditation visits. Sixty-three percent of the faculty interviewed expressed the need to have a colleague or several colleagues with whom one feels comfortable discussing research.

Profound* or key experiences in learning about research were reported by 66 percent of the faculty. Analysis of the data showed that the profound experiences reported 1) involved active interaction, 2) were perceived as important by the interviewee, and 3) could be recalled in detail. The experiences described during the interviews ranged from participating in a workshop with a

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* See definitions.

nationally recognized researcher to having a discussion over lunch with a colleague about mutual research interests or projects underway.

Research Question 2: How is Research Used In Undergraduate Education Courses?

Instructional Objectives. Three themes emerged from the list of 46 instructional objectives or goals for using research cited by interviewees. As shown in Table 1, 70 percent of the faculty mentioned an objective in Category 1 that is summarized by the following statement: "I aim to develop teachers who are critical thinkers and intelligent consumers of research and other new information." Sixty-three percent of the 30 faculty stated instructional objectives that fit into Category 2 illustrated by the following statement: "I include research as another part of the knowledge base that teachers need. I want students to put research in context with other information." Twenty percent of the faculty stated an objective (Category 3) that can be characterized by the question: "What are the direct implications of this research for the classroom?"

TABLE 1

Summary of Responses: Stated Objectives For Using Research In Courses (Item 26)

Response	Frequency of Response (Total = 46)	Percentage of Total Responses (X/46 x 100)	*Percentage of Faculty Response (X/30 x 100)
Objective 1: To develop critical consumers of research.	21	46	70
Objective 2: To consider research in the knowledge base.	19	41	63
Objective 3: To find direct classroom implications for research.	6	13	20

*Note: The percentage of faculty responding in each category (%=X/30 x 100, where X = frequency of responses in that category) cannot total 100% because some faculty responded in more than one category. The 30 faculty gave 46 responses in the "objectives" part of Item 26, Part I.

Instructional Strategies. Table 2 displays the array of instructional strategies reported by faculty in the interviews. One hundred thirteen instructional strategies were found in the data. The number of responses mentioned by the 30 faculty ranged from 1 to 5. The mode number of responses was 4; the mean was 3.8. Analysis of the text of each interview revealed that the instructional strategies mentioned fit into six categories. In order of descending frequency those categories are:

A. Instructor mentions research in class lectures. (Cited by 97 percent of the faculty)

B. Instructor includes class discussions about research (Cited by 77 percent of the faculty)

C. Instructor assigns reading about research studies. (Cited by 73 percent of the faculty)

D. Instructor assigns research-type learning activities. (Cited by 67 percent of the faculty)

E. Instructor models research processes or findings in his/her behavior. (Cited by 37 percent of the faculty)

F. Instructor conducts class demonstrations to illustrate research ideas or processes. (Cited by 27 percent of the faculty)

Clearly, the four major instructional strategies used are lecture, class discussion, assigned readings, and research-type learning acitivites. Instructor modeling and class demonstrations represent minor patterns in the responses.

TABLE 2

Summary of Responses: Instructional Strategies Used by Faculty To Teach Research (Item 26)

Response	Frequency of Response (Total = 113)	Percentage of Total Responses (X/113 x 100)	*Percentage of Faculty Response (X/30 x 100)
Lecture	29	26	97
Class discussion	23	20	77
Assigned readings	22	19	73
"Research" learning activities	20	18	67
Instructor models	11	10	37
Class demonstration	8	7	27

*Note: The percentage of faculty responses in each category (% = X/30 x 100, where X = frequency of response in that category) do not total 100% because most faculty responsed in more than one category. The 30 faculty gave 113 responses to Item 26, Part II.

The following excerpt from the data is included here to show how data were classified. The underscored sections are followed by code letters which show the reader how that information was classified. The coding system is as follows: A(lecture), B(class discussion), C(assigned readings), D(research-type learning experiences), E(instructor models the research), and F(class demonstrations).

> I bring in my journals every month. I say "Here is typical research that's going on." If we're looking at tests, I'd work it into lectures (A). I do it in an unbiased way. Like the latest study on diet and hyperactivity. I share my knowledge so they can draw conclusions. So they can see different perspectives.
>
> They read in journals for assignments. (C) I want them to get acquainted with journals. I loan out journals. They see me using journals. (E)
>
> They do research. They gather information in the field during observations in classrooms. They do interaction analysis during student teaching (D).

> Modeling is definitely useful. Some realize what I'm doing and some don't. Seniors tend to get it (because) they're older. (Coded earlier as E)
>
> (Investigator: What skills or attitudes are you working on? What are your goals?) I want them to see that this is one research project, one study not the answer. It is one way of looking at it. It can get them excited and they are less fearful (Objectives 1 and 2).

Lecture. As shown in Table 2, nearly all the 30 interviewees (97 percent) reported mentioning research in their class lectures. Using only interview data, it is not possible to determine in any valid or reliable way how instructors vary in their use of this instructional strategy.

It is clear from the data that faculty use lecture to achieve various objectives. For example, one instructor reported using lecture to inform the class about Rosenthal and Jacobsen's work on the teacher expectation effect. The interviewee's remarks indicated that the emphasis was on getting the students to apply this information to their field observations. By contrast, several faculty reported giving information in lectures about Piaget's work on cognitive structures with emphasis on the underlying theories that were developed by Piaget. Others in the study reported that they lecture about Piaget's work as an example of naturalistic; longitudinal research methodology. Numerous interviewees reported that they include research findings in their lectures to startle or motivate students' interest in a topic. Finally, the data show that some faculty use a wide variety of materials during lectures to show students inductively how one must use a wide variety of sources of information.

Discussion. Seventy-seven percent of the interviewees reported including research in class discussion. From the data collected it is not possible to determine how often or to what extent discussion is used as the instructional strategy for teaching about research.

It is clear from the data that instructors in the study emphasize the need to think critically about new information and to consider various ideologies. Discussions do not appear to center around individual studies but rather kinds of studies or groups of studies. Research does not appear to be discussed in isolation from other processes and findings used in the courses.

When specific research findings are used they do not appear to be used as final answers. The tone tends to be, "This is what we know now and here is how that problem was studied." Specific, detailed information does not frequently enter the discussion unless "it sticks out for one reason or another."

When interviewees reported holding discussions about inquiry processes used to study phenomenon, the emphasis does not appear to be on developing an awareness of the problems in educational research. The following response to Item 26 illustrate the critical/questioning emphasis in the data:

> I emphasize what research resources are available. And how to critique a study. Reading with a critical eye and being aware of biases. I try to emphasize or draw attention to the effect of sample size. But then I have to make them not always discard a study on that basis. I want them to know that findings are out-of-date quickly. You have to keep up.
>
> I do the roots of educational psychology - people and ideas. How do you become a good consumer of education psychology and research? The terminology and the concepts.
>
> They do research as a group project. They try to think about a problem, do a literature review, form an hypothesis and an experiment, such as something on memory.

Outside readings and research-type assignments. Seventy-three percent of the participants reported assigning students outside readings on research. The faculty had different views on appropriate reading materials for their students. The data show that most faculty reported using a wide variety of reading materials.

The following excerpt emphasizes the typical way in which faculty assign readings:

> I want them (students) to catch my enthusiasm for learning about new things. I might bring the book to class and share it briefly. I did this recently with a book, an excellent book, called A Child Goes Forth by B. Taylor. It's case studies, an excellent book. I alert them to it; tell them where to look.
>
> I use examples of studies in my conversations. For example, the infant/mother separation work by Brazelton ... I try to let them see it isn't generalizable to all situations, all babies, all mothers, but it is probably a valid finding.
>
> I try to make a wide variety of materials available (showed satchel full of materials). They do 10 readings and write a reaction card on each.

Sixty-seven percent of the participants reported assigning students learning experiences that involve "research-type" activities. Analysis of the interviews revealed that faculty reported using the following assignments: "researching"a topic in the library (cited by 53 percent of the faculty); conducting analyses of classroom interaction (cited by 17 percent of the faculty), conducting structured observations in classrooms (cited by 13 percent of the faculty); using various assessment instruments in classrooms (cited by 10 percent of the faculty); and conducting surveys in the school or community (cited by 7 percent of the faculty).

Many faculty had to be probed in regard to whether or not they taught students any research processes. Their responses indicate that most faculty define research as a formal, completely structured investigation of a problem. Thus, the data may be incomplete; faculty may not have reported some relevant assignments. For example, case studies of individual children in a school setting over a period of months may be a regular assignment but may have not been reported here because the instructor did not consider it "research." As one faculty member retorted, "Oh, we're very heavy on structured observations and case studies but I just consider that

observation is a skill teachers need. It's part of the teacher's role." Further investigations using other sources of data are needed to learn which research skills or processes are cultivated in teacher education courses.

Modeling and Demonstrating research processes and findings. Both of these instructional strategies represent minor trends in the data. Thirty-seven percent of the participating faculty reported that they attempt to model certain behaviors for their students. Examples given show that faculty attempt to model particular research findings as well as certain thinking processes: 1) modeling various organizational techniques to illustrate as aspect of time-on-task research findings; 2) modeling enthusiasm for new knowledge, 3) modeling about individualized instruction by varying assignments to meet the developmental levels of teacher education students, and 4) modeling the use of thinking processes by using qualifying statements such as "This is how some people have studied the problem ..."

All of the participants who reported using modeling in their classes were probed regarding its effectiveness. All of them indicated that 1) modeling can be an effective means for communicating some ideas and 2) the instructor must point out what he or she has modeled in most cases. As one instructor pointed out, "I have to sort of ring a bell and say, 'Hey, what did I just do?'"

Twenty-six percent of the participants cited specific examples of demonstrations that they use in class to teach about research. Some of the examples cited during the interviews are described here briefly:

1. Students participate in a demonstration of the effects of selective reinforcement.

2. During class students analyze a list of prepared statements to determine whether or not the statement is "research" or "philosophy" using specified criteria.

3. Students complete a questionnaire from a major study during class. Then the instructor tabulates

class results and compares them with those from the original study.

4. Instructor conducts various Piagetian assessments on a child during class.

5. Using a videotape of a live classroom situation, instructor demonstrates how the interaction could be analyzed using Flanders' Interaction Analysis system.

The data show that a class demonstration may be used for various purposes. Demonstrations were used to convince, to motivate, and to illustrate an idea.

Faculty emphasized their role in screening information for their students. They regard research as one process for gaining knowledge and stress their role in exposing education students to a wide variety of ideas. Nearly all interviewees responded that they emphasize different aspects of research studies depending on their instructional goals. Theories or principles are reported to be emphasized most frequently, followed by issues, methodology of the study, and the implications or findings. See Table 3 for a summary of those data.

TABLE 3

Summary of Responses: Aspects of Research Emphasized in Courses (Item 31)

Response	Frequency of Response (Total = 53)	Percentage of Total Responses (X/53 x 100)	*Percentage of Faculty Response (X/30 x 100)
Theories or Principles	24	45	80
Issues	10	19	33
Methodology	10	19	33
Implications or Findings	9	17	30

*Note: The percentage of faculty responses in each category (% = X/30 x 100, where X = frequency of response in that category) do not total 100% because most faculty responded in more than one category. The 30 faculty gave 53 responses to Item 31.

Materials. Fifty-seven percent of the thirty faculty showed teaching materials during the sessions that they use in teaching about research. Textbooks and journal articles were shown most often. Instructor-made materials shown could be characterized as 1) materials to teach specific research processes and 2) materials to synthesize and condense information.

Research Question 3: What are the Characteristics of Research Used in Undergraduate Education Courses?

Faculty reported that they typically select research that 1) fits the existing conceptual structure of their courses, 2) meets their own standards, and 3) is available in an easily used form.

Findings from research are included in courses more frequently than research processes. The "research process" most frequently reported as part of the undergraduate courses was "researching a topic in the library" (cited by 53 percent of the faculty). Conducting structured observations and doing classroom interaction analyses represent the next most frequently taught research processes.

When citing the "most important research" to consider in the education of teachers, faculty mentioned kinds of studies rather than particular investigations. They mentioned the names of theorists and education writers as well as researchers. Most frequently cited as important research contributions were the work of Piaget, Flanders' and other interaction analysis researchers, Skinner, Bloom, and cognitive structure research.

Research Question 4: What Are the Factors in the Institutional Contexts or Work Settings That Encourage Faculty Use of Research?

Research involvement is not expected behavior for faculty in most teacher programs in the study. In only one of the six programs surveyed did faculty perceive that research involvement was mandatory for promotion and tenure. This finding agrees with Clark and Guba (1976-77) and Yarger and Joyce (1977). Eighty-seven percent of the thirty faculty reported having no released time for research. Ninety-seven percent of the faculty reported having numerous committee responsibilities. Sixty-six percent

reported having some administrative or supervisory duties in addition to teaching.

Faculty indicated that they are most inhibited from learning about and getting more involved with research by 1) lack of large blocks of time, 2) having other work priorities, and 3) committee work. They are encouraged most by the possibility of obtaining small seed grants or released time to do research.

Analysis of the data on reported research involvement indicates that of faculty currently involved in research, more work in the small programs and in private institutions. The highest faculty workloads were reported by participants from medium-size programs and from private institutions. The small programs group and the private institutions report fewer "other responsibilities" than the other groups.

In interviews with the six chairpersons or deans, most (83 percent) indicate that they perceived faculty as having some time available for research. Like the faculty in most of the programs, the chairpersons perceived that teaching performance was more highly valued for promotion and tenure than research involvement.

CONCLUSIONS

1) The reality of undergraduate teacher education seems to be that courses become cramped because of the pressures to include field components in nearly all professional courses. Given all the possible sources of information and learning experiences that might be considered useful and important in include in pre-service courses, clearly some choices have to be made. Thus, time press was a frequent theme in the faculty remarks on the use of research.

2) An important factor in the way faculty in this study screened information was their commitment to getting education students to think critically about <u>all</u> new information. A frequent theme in the interviews was belief in exposing education students

to a wide variety of information sources.

3) Research is considered of no more value and possibly even less value than other information sources. Personal observation is generally a valued information source and is considered no less valid when contradictory findings from a single study are reported. The following thoughts characterize the attitudes of most interviewees toward research:

> This research is a piece of the knowledge base - not the end. I say fit it into the big picture of what happens in education and why.
>
> I emphasize the idea that research is one avenue for gaining information. Pull from research what fits into your experience.

4) Expectations for any single research study (or other information source) to provide "final answers" about teaching and learning were not evident in the opinions expressed by faculty in this study.

5) Faculty most often include research in their lectures and class discussions rather than using other instructional strategies that consume more class time.

6) Sifting information and breaking the information into manageable chunks that fit into existing conceptual systems is a practical concern for these faculty in their role as "teacher." Devices such as stages (Piaget), taxonomies (Bloom), simplistic phrases to describe phenomena (ALT, time-on-task, wait-time, Pygmalion Effect) formulas (Skinner), and categories (Flanders) appear to provide needed tools for faculty. They report considerable time press in their courses and take responsibility for translating the research ideas for students efficiently.

7) The pre-service professional education courses described in the interviews do not generally appear to be conceptualized to systematically teach specific thinking processes. There do appear to be some common beliefs about A) the content information education students should be acquainted with, B) the skills good

teachers need, and C) some attitudes desirable for teachers. The emphasis on thinking processes appeared to depend on the particular bent of individual instructors.

8) In the six education departments in this study faculty were expected to "wear several hats" simultaneously. They were nearly all involved in field supervision, administering programs, advising students, working on projects with school systems, participating actively in professional associations, teaching three to five courses, and serving on numerous campus committees. Research involvement and interaction were generally not a visible part of the culture. Those who managed research involvement did so "out of hide" and without guarantee of reward.

LIMITATIONS OF THE FINDINGS

1) The limited size of the faculty sample used in this study seriously limits any generalizations from these findings. While the participants may be representative of full-time, undergraduate faculty, education courses are often taught by a wider variety of individuals.

2) There are inherent limitations to using interview data to draw valid inferences about classroom behaviors. Subjects rely on memory and "occasional events" may be treated with the same emphasis as more regular classroom events.

3) Content analysis done by a single researcher may be subject to errors of reliability and bias.

SUGGESTIONS FOR FURTHER STUDY

Further investigation on the pre-service teacher education curriculum is needed using other sources of data. Participant observations and individual case studies of education courses may yield a more complete picture of the culture of pre-service education programs. Longitudinal studies using a variety of data to track education students through their professional programs

may provide valuable insights into the pre-service teacher education curricula. Researchers could ask such questions as: In how many courses do education students learn about the work of Piaget, Skinner, Bloom, and Flanders? Where and to what extent are thinking skills (such as decision-making and problem-solving) taught? Do education students participate in collecting data on classroom phenomena or do they passively learn about research?

"Tools" for meshing theory, research, and practice did not appear to be widely used by faculty in this study. Research has traditionally been reported to limited audiences with a "trickle-down" effect expected. On the basis of these findings a more realistic approach may be for researchers and linkers to investigate meaningful tools to convey concepts and skills to those entering the profession. The emphasis of such combined development efforts need not be the production of gimmicks to convey a static set of rules for teaching. Rather, as suggested by Gage (1978a), tools may provide a needed link between ideas and actions in the profession.

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